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The Helicopter

Gelikopter

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Chapter I

/Summary/THE HISTORY OF THE HELICOPTER

The idea of the helicopter dates back 200 years, when M. B. Lomonosov announced on 4 February 1754 to the Academy of Sciences his invention of an aerodynamic machine for carrying meteorological instruments to a desired height. It was a small, twin-propeller helicopter. The propellers were co-axial, placed one over the other, and set into motion by a powerful spring.

In the course of years, a number of inventors followed that of Lomonosov.

Thus, in 1869, A. C. Lodygin proposed an "electroplane" with a special electric motor to rotate the propellers.

In 1870-71, M. A. Rykachev carried out a study of propellers with a view toward determining their power and draft capacities.

In 1881, the inventor, Grokhovskiy, drew up a plan for a helicopter combining the characteristics of the airplane and helicopter. It was to be equipped with two propellers -- one for raising the machine and the other, for keeping it suspended. In 1896, a foreman of the Sestroretskiy Plant, named Konovalov, drew up a plan for a twin-propeller, gasoline-operated helicopter,

Among those who contributed to the development of the helicopter, were such names as D. I. Mendeleyev, N. Ye. Zhukovskiy, and S. A. Chaplygin.

In 1907, K. A. Antonov applied for a patent for his design of a helicopter, which was subsequently built according to his plan. It was a twin-propeller, co-axial machine with numerous aluminum discs and blades. It had a small propeller for horizontal motion,

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and its motor had only 35 horsepower.

However, it was B. N. Yur'yev, who at the beginning of the 20th century, was instrumental in launching the modern era of helicopters. In 1908 - 1910, he designed a number of single helicopter, with a steering propeller. Subsequently, he designed machines which were to have 70- or 50-horsepower motors. Finally, in 1912, he designed a helicopter, to be driven by a 25-horsepower Ansani motors. The machine was tested, but the lack of funds prevented the completion of its design.

Yur'yev also invented the automatic propeller-pitch regulator.

Under the direction of A. M. Izakson and A. M. Cheremukhin, in 1930, the 1-EA helicopter was built, which made a record flight rising to 605 meters and beating the record set in 1928 by the Italian Ascanio helicopter (18 meters) and later, in 1936, the record made by the Brege-Doran helicopter (180 meters).

In 1933, the Soviet 5-EA helicopter was built and, subsequently, the 11-EA and 11-EAPB; the 11-EAPB made regular flights, carrying two persons.

In the air parades held in Tushino in 1946-1947, appeared the "Omega" helicopters, designed by Bratukhin. They rose and landed vertically without any preliminary runs.

In 1928, at Tushino two different types of helicopter were demonstrated. One, a tiny machine, designed by N. I. Kamov, was brought into the field on the platform of a truck, and rose into the air directly from the truck. After circling the airfield, it stopped still in the air, then slowly landed again on the truck platform. The second was a helicopter designed by Bratukhin, a twin-motor plane, winner of the Stalin prize.

Kamov's and Bratukhin' helicopters represent the new achievements of Soviet science. Kamov's "Irkutyanin" is the lightest machine

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known, and carries one person. Attempts abroad to design a similar machine have not been successful. Bratukhin's helicopter is a powerful machine, capable of carrying out various tasks in the national economy and the Soviet armed forces.

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